THE OPEN DROP METHOD OF ADMINISTERING ETHER

By MARY A. MESSER, R.N.

Anaesthetist to the Beacon Hill Hospital, Manchester, N. H.

The open drop method of administering ether was first instituted by the Mayos at St. Mary's Hospital, Rochester, Minn., in 1896. Due to its many advantages over the old method, of giving with a cone, it has been adopted by many hospitals and surgeons throughout the country.

We have used this method very successfully for five years at the Beacon Hill Hospital. We have found that it has taken much less ether to produce narcosis, consequently consciousness is restored very soon. Very little nausea and vomiting are experienced and in many cases none whatever, so that the patient is able to take water and nourishment at the proper time. He is not prostrated by a day or two of vomiting due to the ether.

We have had visiting doctors tell us that they have not been able to produce surgical anaesthesia by this method. This is because it is not properly understood and followed.

We use a Ferguson's mask, which is made of coarse wires crossing each other. It is well shaped to fit the face with a special part for the nose and a handle at the left so that it can be held well over the face by the anaesthetist and not allowed to press heavily on the face. Outside of this frame is another part made of circular wire, which fits on to the first frame. Before applying this, a pad of four pieces of surgeons' gauze stitched together, or two pieces of stockinet is stretched. There is about 2 inches space from the patient's face to the gauze on which the ether is dropped. This space gives ample room for the required amount of air. The wire frame is boiled and the gauze washed and sterilized after each patient.

The patient comes directly to the operating room and is assisted and placed comfortably on the operating table. Note operating table rather than stretcher, as this necessitates no further moving or fussing with the patient, after anaesthesia takes place. In lifting the patient about from one table to another, he is apt to partly regain consciousness, therefore more ether is given and the time is prolonged. Our aim is always to keep the patient under ether for the shortest time possible. We find that by anaesthetizing in the operating room and on the operating ing table we save from five to ten minutes.

The hands of the patient are folded across the chest and tied loosely

with a wide gauze rope. This is so that they will not fall over the sides of the table which might cause paralysis, or be in the surgeon's way. The legs are also held in place by a snug but not tight strap over the knees. It should always be explained to the patient that this is done not to tie him down, but so that when relaxation occurs, his limbs will stay in place.

A towel is placed over the eyes to protect them from the ether. This towel is brought up over and down under the head which helps to hold it in position. A small pillow is usually given. Artificial teeth, chewing gum, etc., ought to be removed before the patient leaves the ward, but it is always well to inquire if this has been done.

The anaesthetist should meet the patient in a cheerful, sensible manner and endeavor to inspire confidence. Suggestion and psychological influence appeal to the subconscious self, so that if these are made use of on the part of the anaesthetist, while the ether is being administered, the patient will yield sooner to its effect.

The patient should not be encouraged to talk, for the reason that after a little ether has been inhaled he is very likely to become noisy. Especially is this true of the person with an emotional temperament. It is a kindness to the patient not to encourage conversation.

For the ether, a 5-ounce bottle is used, and the dropper is made by cutting a groove on either side of an ordinary cork. A strip of gauze 2 inches long and 1 inch wide is folded lengthwise and placed in one groove, extending out of the bottle 1 inch. A large drop of ether can be obtained by having the end of the gauze which extends out of the bottle cut off squarely, or a small drop with the end cut obliquely. The frequency of the drop is modified by the way the bottle is held in the hand. After a little practice the size of the drop and the frequency of dropping is completely controlled by the anaesthetist. At first the ether is dropped on very carefully and slowly and the patient told to breathe in a natural manner. If told to take very deep breaths, he is apt to feel suffocated, and choking and struggling will follow.

When the face becomes flushed, a square piece of toweling, 8 by 8, with a circle 2 inches in diameter and a slit at the left of 3 inches, to fit over the handle of the frame, is placed over the mask. This is so placed that the circle will come directly over the mouth and nostrils. The ether is dropped around this circle with the right hand, while the left hand holds the jaw up and forwards.

Usually in from three to five minutes the patient is ready for the final preparation. This consists of moving the table, with the patient, to its proper place in the operating-room, putting the patient in the required position for operation and taking the dressings off. By this

time the subject is surgically anaesthetized. After the incision is made, the piece of gauze cut obliquely is inserted into the bottle and the drops are given with less frequency. During the last stage of the operation, no ether is given, everything being removed from the patient's face, so that he may have plenty of air. We endeavor to have the patient begin to wake up before leaving the operating room. Often he will begin to recognize persons and objects before reaching his room.

From the time the ether is first begun, respiration and color are carefully watched. If these are good, we feel sure the patient is all right. If difficult breathing occurs, cough or profuse secretion of mucus, the mask is lifted from the face, mucus wiped away with gauze wipes, and plenty of air given for a moment. After this the ether can usually be continued in safety.

Turning the head from side to side will often dislodge mucus which has caused difficult respiration. If the tongue falls back into the throat, the mask should be taken off and the first and second fingers of the right hand inserted on either side of the lower jaw. Pressure is made downwards thus bringing the tongue forward. Often this does away with the use of the tongue-forceps, thus preventing a very sore and swollen tongue. We always keep an accurate account of just how much ether each patient takes, the length of time under ether and the time of operation. Therefore we know the exact amount of ether in the system at all times.

No one rule can be laid down that, for a certain operation, a patient will take two or three ounces of ether, as all depends on temperament, pathological condition and the length of the operation. Nervous people and alcoholics require much more than other people.

With this method the fear of ether so prevalent is taken away, and the patient becomes unconscious without a struggle. Suffocation, choking and struggling are not experienced at all, or in a minor degree. Many say afterwards, "It was just like going to sleep."

These facts, together with the small amount of ether inhaled into the system, also the very little nausea and vomiting afterward, make this method most satisfactory.

Many hospitals and surgeons are employing graduate nurses as their anaesthetists, who are becoming very proficient in this line of work. This plan has generally been found to work very well. The nurse gives her whole attention to the patient and does not attempt to follow the intricacies of the operation. Often the doctor, especially the young interne, is desirous of learning a little surgery at the same time he is administering the anaesthetic, his attention, therefore, is given to the surgeon rather than to the patient.

The idea of the nurse as a professional anaesthetist has met with some

criticism. The argument is used that she is not fitted or trained to give a dangerous drug like ether and that she is usurping the doctor's sphere. The nurse never gives ether unless by the orders of a physician, why, therefore, cannot she give this drug in his presence and by his orders just as she gives other dangerous drugs under his instructions? The work may never become very popular with nurses for there is not the satisfaction and encouragement about it that is found in the personal contact of private work or some other forms of nursing. There is also a certain nervous strain which is rather trying. The process can only be taught to a certain degree, as practice and experience count more than anything else in making an efficient anaesthetist.

TRAINED NURSING IN THE LIGHT OF HUMAN PROGRESS [1]

By I. M. J. HOTVEDT, M.D.

Muskegon, Mich.

We need not be very acute observers to discover that a marked characteristic of human life is that of change. There is no such thing as absolute standstill. There is a constant transferring, a coming from and a changing into. We might, indeed, say that life is a continuous evolution.

The history of the physical world is only a record of changes, and such is human history, but we notice that certain elements enter this field which are found there only. We notice that with the various changes taking place, there is a gradual advancement. Not only is there an advancement, a movement forward, but this movement, in time, becomes more rapid and exclusive. It increases in speed and volume, as it were, and in so doing it gathers momentum, until there is a tremendous onward rush that no human power can stay. This we know as human progress, the only real distinguishing characteristic, it seems, of the human race.

Look back in history. For centuries there is what might be called a "mark-time march." Babylonia, Egypt, Greece, and Rome show ample evidence of activity, but, after all, the intellectual horizon remains about the same.

With the arrival of the fifteenth century dawns a new era. Important geographical discoveries are made. Copernicus and Galileo, by their unraveling in physical science, and especially astronomy, create,

[1]Address delivered to the graduating class of Hackley Hospital.